



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,085	07/26/2005	Gavin R. Erry	124-1120	9068
23117 7590 06/22/2007 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			EXAMINER PRITCHETT, JOSHUA L	
			ART UNIT 2872	PAPER NUMBER
			MAIL DATE 06/22/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/539,085

Applicant(s)

ERRY ET AL.

Examiner

Joshua L. Pritchett

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Art Unit: 2872

DETAILED ACTION

This action is in response to Preliminary Amendment filed July 26, 2005. Claims 1-5, 10 and 15 have been amended as requested by the applicant.

Specification

The disclosure is objected to because of the following informalities: the specification contains no section headings.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3-6, 8-11, 14-16, 18, 22 and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Otten (US 2002/0071098).

Regarding claim 1, Otten discloses a radiation focusing element having at least one surface provided with at least one diffraction grating (17) that is distorted substantially according to a quadratic function (Fig. 1A; para. 0042).

Regarding claim 3, Otten discloses the focusing element surface comprises a radiation transmissive material (Fig. 1).

Regarding claim 4, Otten discloses only one surface of the lens is provided with the grating (Fig. 1).

Regarding claim 5, Otten discloses dispersion inherent in the grating is reduced by the lens itself or by at least one refractive element. Otten teaches all the claimed structural limitations and therefore is capable of performing all the claimed functional limitations (MPEP 2114).

Regarding claim 6, Otten discloses the grating is a phase grating (para. 0042).

Regarding claim 8, Otten discloses the grating is provided in a layer covering at least part of the surface (Fig. 1; para. 0041).

Regarding claim 9, Otten discloses the layer is made of a glassy composition (Fig. 1). The current specification defines glassy essential as transmissive (current spec. para. 0005).

Regarding claim 10, Otten discloses the layer is made of a radiation obscuring material (Figs. 1 and 1A).

Regarding claim 11, Otten discloses the layer is shape (Fig. 1).

Regarding claim 14, Otten discloses a mask (17) on at least one surface of the element to provide an aperture (Fig. 1).

Regarding claim 15, Otten discloses the mask is provided in a layer on a single surface of the focusing element (Fig. 1).

Regarding claim 16, Otten discloses the mask and the grating are provided on the same surface of the focusing element (Fig. 1).

Regarding claim 18, Otten discloses use with optical radiation (Fig. 1).

Regarding claim 22, Otten discloses a three dimensional imaging system (para. 0055).

Regarding claim 23, Otten discloses a wavefront sensor (para. 0041).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 12-15, 17 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otten (US 2002/0071098) in view of Pedersen (US 2002/0044285).

Regarding claims 2 and 12, Otten teaches the invention as claimed but lacks reference to a reflector. Pedersen teaches a diffractive surface used as a reflector (Fig. 1a). Pedersen teaches the reflector comprises a reflective layer on a substrate and the reflective layer is shaped to provide the grating (Fig. 1a). It would have been obvious to one of ordinary skill in the art at the

Art Unit: 2872

time the invention was made to have the Otten invention include the reflective nature of Pedersen for the purpose of increasing the versatility of the Otten diffractive grating.

Regarding claim 13, Otten teaches the invention as claimed but lacks reference to a bulk element. Pedersen teaches the grating is provided in the surface of the bulk element itself (Fig. 1a). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Otten invention include the bulk element of Pedersen for the purpose of providing the grating in a large assembly with a lens element.

Regarding claims 14, 15 and 17, Otten teaches the invention as claimed but lacks reference to a separate mask and grating. Pedersen teaches a mask (5) on at least one surface of the element to provide an aperture. Pedersen teaches the mask is provided on a single surface of the focusing element (Fig. 1a). Pedersen teaches the mask and grating are provided on opposite surfaces of the focusing element (Fig. 1a). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Otten invention include the mask of Pedersen for the purpose of controlling the amount of light transmitted by the focusing element.

Regarding claims 19-21, Otten teaches the invention as claimed but lacks reference to the method of creating the grating. Pedersen teaches the use of embossing (para. 0044), etching (para. 0042) and moulding (para. 0044) to create gratings. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Otten invention include the method of making the grating of Pedersen for the purpose of creating a grating in a precise known manner.

Art Unit: 2872

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Otten (US 2002/0071098) in view of Deshmukh (US 2003/0186142).

Otten teaches the invention as claimed but lacks reference to an amplitude grating. Deshmukh teaches an amplitude grating is functionally similar to a phase grating (abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Otten invention include an amplitude grating as taught by Deshmukh for the purpose of correcting the amplitude of an incident light beam.

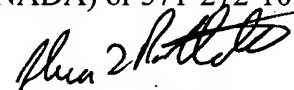
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L. Pritchett whose telephone number is 571-272-2318. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2872

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Joshua L Pritchett
Examiner
Art Unit 2872